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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/403,755	04/13/2006	Louis J. Spadaccini	67097-015 PUS2; EH-10926	9529
54549	7590	06/27/2006	EXAMINER	
CARLSON, GASKEY & OLDS/PRATT & WHITNEY 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			CASAREGOLA, LOUIS J	
			ART UNIT	PAPER NUMBER
			3746	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	11/403,755	SPADACCINI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Louis J. Casaregola	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27,30 is/are allowed.
- 6) ☒ Claim(s) 19,23-26 is/are rejected.
- 7) ☒ Claim(s) 20-22,25,28-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                                    |

### ***Objections To Claims***

Claims 25, 28 and 29 are objected to under 37 CFR 1.75(a) for the following reason:

Claimed reference to a "boot" pump (claim 25, line 2 and claim 28, line 1) appears to be a typographical error – it is believed that applicants actually intended to recite a "boost" pump.

### ***Claim Rejections - 35 USC 112***

Claim 23 is rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claim 23 includes the expression "reducing the net positive suction pressure at an inlet of the main fuel pump". This reference to reducing pressure is vague and indefinite – reducing the pressure relative to what?

### ***Claim Rejections - 35 USC 102***

Claims 19, 23 and 24 are rejected under 35 USC 102(b) as being anticipated by either Angell or Taylor et al.

Applicants' broadly claimed fuel system operating method reads on the operation of prior art fuel systems of the type disclosed by Angell and Taylor. Angell's fuel pump 42 corresponds to the claimed main fuel pump and his upstream boost pump 44 also comprises a de-aerator since pump 44 is specifically designed to free all gases and vapors from the fuel (see col. 3, lines 48-50). Taylor's system similarly includes pump 4 corresponding to the claimed main fuel pump, vapor separator 13 corresponding to the claimed de-aerator, and upstream pump 1 which constitutes a boost pump (see Figs. 3 and 4).

Claim 25 is rejected under 35 USC 102(b) as being anticipated by Taylor et al.

Note that in Taylor's system, vapor separator (de-aerator) 13 is located between upstream pump (boost pump) 1 and main pump 4.

Claim 26 is rejected under 35 USC 102(b) as being anticipated by Angell.

Note that separated gases flow out the top of Angell's pump unit 14 and are thus vented overboard relative to the pump system (see gas exit arrows near elements 20 in Fig.2).

### ***Allowable Subject Matter***

Claims 27 and 30 are allowed, and related dependent claims 28 and 29 will be allowed when the above objection is overcome. Claims 20-22 also contain allowable

subject matter but are objected as depending from a rejected parent claim. If rewritten in independent form, claims 20-22 will be allowed.

### ***Additional References***

Taivalkoski et al is cited to provide useful background information on mechanical vapor separators that operate on a centrifugal or vortex flow principle (see element 44). Note that such devices are capable of separating dissolved gases to produce de-aerated fuel as described, for example, in column 4, lines 65-67.

Huang et al is cited as disclosing an example of a fuel pump system including a deoxygenator upstream of a fuel pump (see elements 16 and 20). Note that a deoxygenator is not construed as a de-aerator since it is capable of removing only one type gas, i.e. oxygen.



L. J. Casaregola  
571-272-4826 (M-F; 7:30-4:00)  
571-273-8300 FAX  
June 21, 2006

Art Unit: 3746

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).